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## The genus *Ectropis* Hübner (Lepidoptera : Geometridae) from the Philippines, with descriptions of two new species

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**Abstract** Four species of the genus *Ectropis* Hübner are recorded from the Philippines. *E. consentanea* and *E. schintlmeisteri* are described as new to science.

**Key words** Geometridae, *Ectropis*, taxonomy, the Philippines.

The genus *Ectropis* Hübner was strictly redefined based on *E. crepuscularia* ([Denis & Schiffermüller]), the type species of the genus, and its relatives (Sato, 1980, 1984). A close examination rested on my definition revealed that four species of *Ectropis* have been found from the Philippines, two of which are new to science.

The following abbreviations are used to indicate the location of specimens.

BMNH: British Museum (Natural History), London. NSMT: National Science Museum, Tokyo. ZMC: Zoological Museum, Copenhagen, Denmark. ZMFK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn. HI: H. Inoue. RS: R. Sato.

*Ectropis bhurmitra* (Walker) (Figs. 1 & 2)

*Boarmia bhurmitra* Walker, 1860: 381.

*Ectropis bhurmitra*: Prout, 1914: 266.

*Boarmia diffusaria* Walker, 1860: 381.

*Ectropis sabulosa* Warren, 1897: 248. **Syn. nov.**

*Ectropis sabulosa* ab. *insula* Warren, 1902: 368. **Syn. nov.**

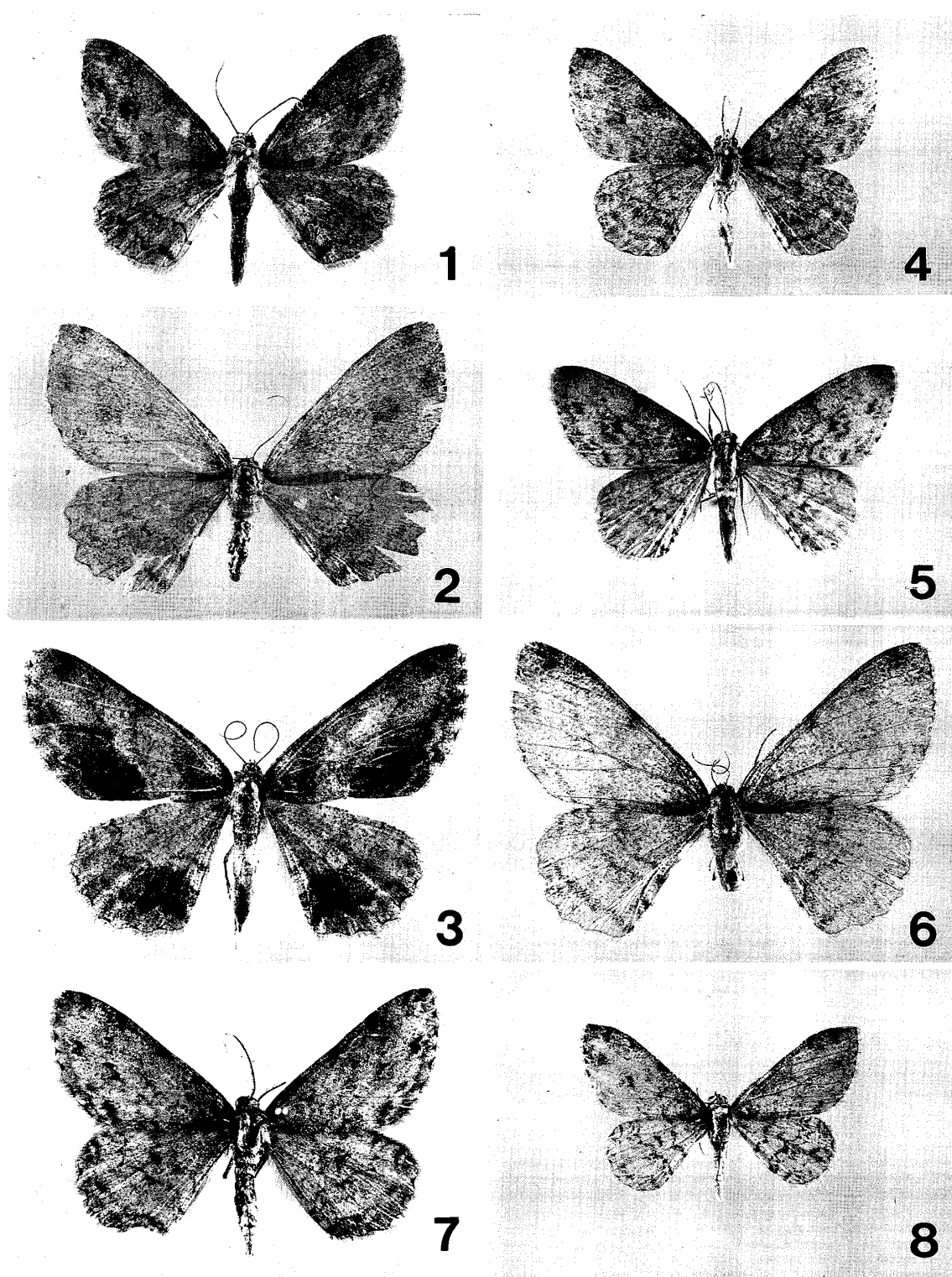
*Scioglyptis semifascia* Warren, 1897: 99. **Syn. nov.**

*Heterostegane semifasciata* Warren, 1900: 111. **Syn. nov.**

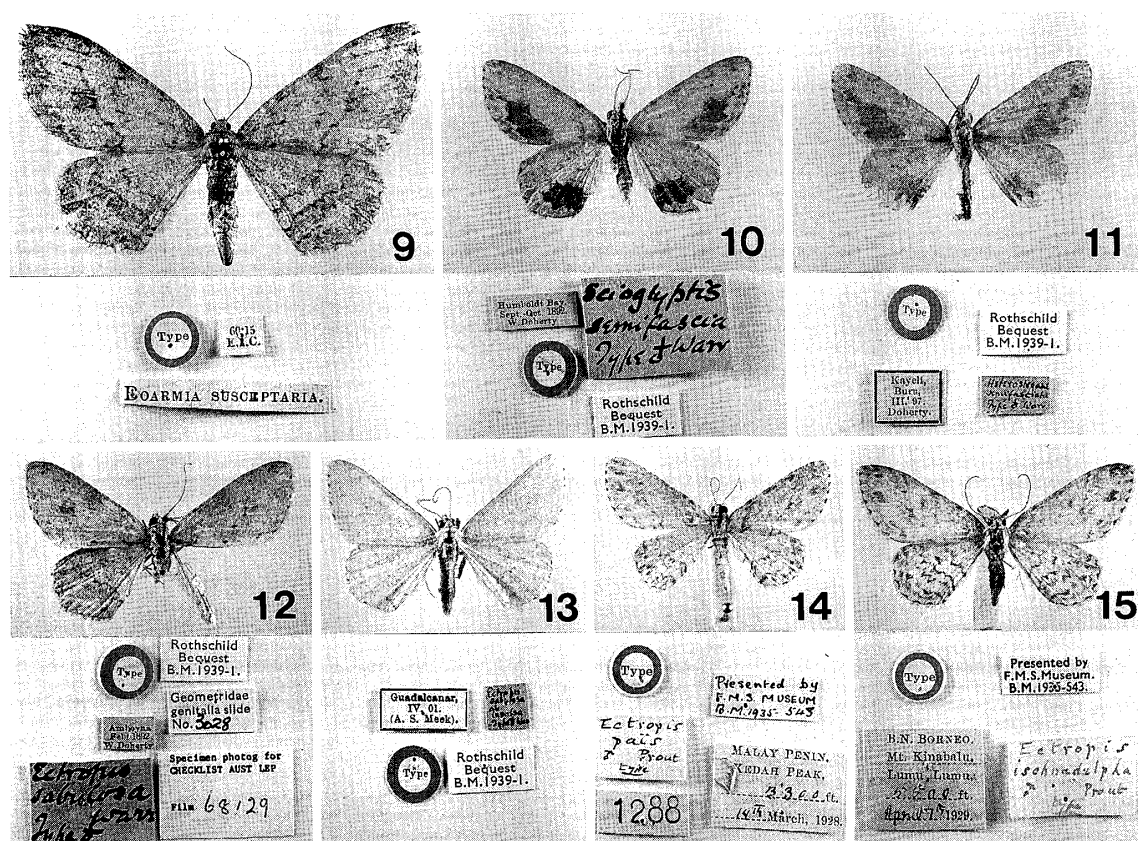
*Ectropis brevifasciata* Wileman, 1912: 69. **Syn. nov.**

*Ectropis dentilineata*: Semper, 1901: 612 (nec Moore, 1868: 631).

My cautious examination of the type specimens of *bhurmitra* and its relatives at BMNH confirmed five new synonyms as listed above. *Bhurmitra* and *diffusaria* were described simultaneously: the former from Ceylon (=Sri Lanka) based on one female, the latter from Punjaub (=Panjab) on one male. Moore (1887) suggested that *bhurmitra* might probably be a large female of *diffusaria*, and Hampson (1895) regarded *diffusaria* as a junior synonym of *bhurmitra*. In my previous paper on Taiwanese *Ectropis* (Sato, 1986), I treated *brevifasciata* as a good species, showing some differences from *bhurmitra*. The condition of radial veins of forewing was considered to be one of the most useful characteristics to separate the two species: veins  $R_{1+2}$  arising from  $R_3$  in *bhurmitra*, while from cell in *brevifasciata*. At that time, I was able to compare only colour pictures of the type material taken by Mr. D.S. Fletcher, BMNH. In comparing the venation, I examined many specimens of *brevifasciata* from Taiwan, but as for *bhurmitra* I followed Hampson's redescription (1895). Later my actual comparison of the two species, including the type material, revealed that they have the same venation:  $R_{1+2}$  arising from cell. Moreover I



Figs. 1-8. *Ectropis* spp. 1. *E. bhurmitra* (Walker). ♂, Palawan. 2. *Ditto*. ♀, Luzon. 3. *Ditto*. ♀, Taiwan. 4. *E. consentanea* sp. nov. ♂, holotype, Luzon. 5. *Ditto*. ♂, paratype, Mindanao. 6. *Ditto*. ♀, paratype, Luzon. 7. *E. schintlmeisteri* sp. nov. ♂, holotype, Luzon. 8. *E. pais* Prout. ♂, Mindanao.

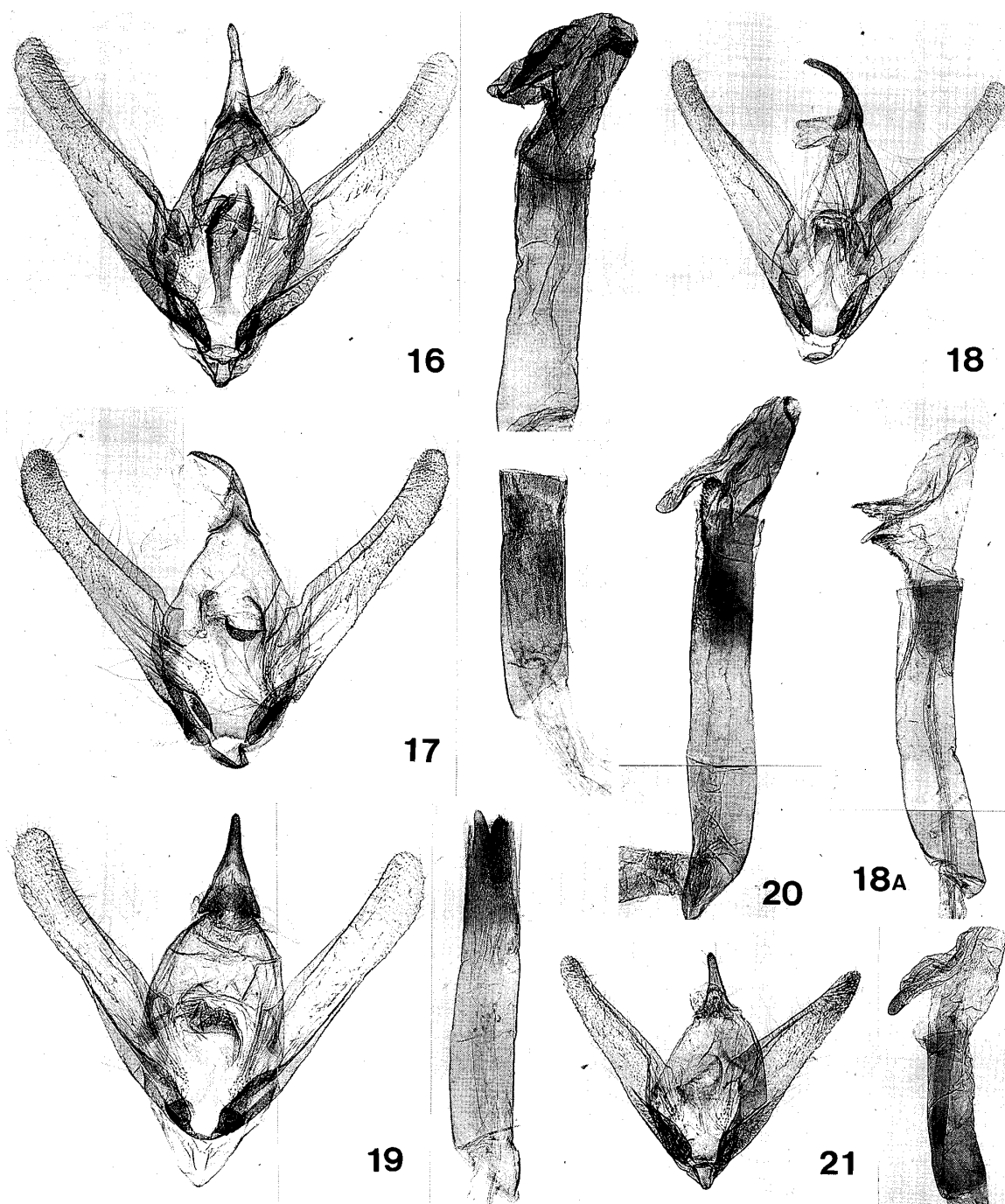


Figs. 9-15. Holotypes of *Ectropis* spp. in BMNH. 9. *Boarmia susceptaria* Walker. ♀. 10. *Scioglyptis semifascia* Warren. ♂. 11. *Heterostegane semifasciata* Warren. ♂. 12. *Ectropis sabulosa* Warren. ♂. 13. *Ectropis sabulosa* ab. *insula* Warren. ♂. 14. *Ectropis pais* Prout. ♂. 15. *Ectropis ischnadelpha* Prout. ♂.

found that the male and female genitalia of the two species are identical (Figs. 16, 17, 22 and 23). Therefore I have come to the conclusion that *brevifasciata* should be sunk as a junior synonym of *bhurmitra*.

There is a remarkable form having a large purplish brown patch developed between postmedial and subterminal lines on each wing. The holotype of *brevifasciata*, *semifascia* and *semifasciata* belong to this form. This form had been found only in males (Sato, 1986), but one female collected from Taiwan exhibits the same maculation (Taipei, Wulai, Fushan 400 m, 23-25. viii. 1990, M. Owada leg.) (Fig. 3).

Specimens examined. Luzon. Banaway, 4♂, 11-12. v. 1986, 3♂, 21. i. 1986, 2♂, 28. i. 1986, 1♂, 10. iv. 1986, 1♂, 6. ii. 1986, 1♂, 9. v. 1986 (native collector), RS, 1♂, x. 1988-1. i. 1989 (T. & F. Vermolen), RS, 2♂, 8-12. ii. 1988 (Cerny & Schintlmeister), ZMFK, 1♀, 1. vi. 1957 (Tage Ellinger), ZMC; Talubin, 7 km SE Bontoc, 1♀, 14-17. ii. 1988 (Cerny & Schintlmeister), ZMFK; Bolog, 14 km SE Lagawe, 3♂, 7. ii. 1988 (Cerny & Schintlmeister), ZMFK. Palawan. Mantalingajan, Pinigisan 600 m, 3♂, 4. ix. 1961, 1♂, 6. ix. 1961, 2♂, 1♀, 8. ix. 1961, 1♂, 11. ix. 1961, Noona Dan Exp. 61-62, ZMC; Brookes Point, Uring Uring, 1♂, 18. viii. 1961, Noona Dan Exp. 61-62, ZMC; 1♂, 21. i. 1986, 1♂, 9. v. 1986 (native collector), RS; S. Vicente, 20 km NEE Roxas, 2♂, 12-17. i. 1988 (Cerny & Schintlmeister), 1♂ RS, 1♂ ZMFK; Mt. Gantung, 1♂, 19-21. i. 1988 (Cerny & Schintlmeister),



Figs. 16-21. Male genitalia of *Ectropis* spp. 16. *E. bhurmitra* (Walker). Luzon. Slide RS-3464. 17. *Ditto*. Holotype of *Boarmia diffusaria* Walker. Punjaub. Geomet. slide no. 3029 in BMNH. 18. *E. consentanea* sp. nov. A: aedeagus. Mindanao. RS-3458. 19. *E. schintlmeisteri* sp. nov. Luzon. RS-2881. 20. *Ditto*. Aedeagus. Vesica everted. ZMFK. 21. *E. pais* Prout. Mindanao. RS-3465.

ZMFK. Mindoro. Pusok, 35 km NNE San Jose, 2 ♂, 27. i. 1988 (Cerny & Schintlmeister), RS; Pacloto, 10 km E San Jose, 1 ♂, 28. i-4. ii. 1988 (Cerny & Schintlmeister), ZMFK. Mindanao. Bukidnon, 45 km NW Maramag, Mt. Binansilang, 1200 m, Bergurwald, 1 ♂, 2. x. 1988 (Cerny & Schintlmeister), RS.

The following type specimens in BMNH were also examined. *Bhurmitra* (Sato, 1986: 75, fig. 11). ♀, "Type/Ceylon, 52-62". *Diffusaria* (Sato, 1986: 75, fig. 12). ♂, "Type/Punjab, 54-74/Geometridae genitalia slide No. 3029". *Sabulosa* (Fig. 12). ♂, "Type/Amboyna, Feb. 1892, W. Doherty/Geometridae genitalia slide No. 3028". *Sabulosa* ab. *insula* (Fig. 13). ♂, "Type/Guadalupe, IV. 01, A. S. Meek". *Semifascia* (Fig. 10). ♂, "Type/Humboldt Bay, Sept.-Oct. 1892, W. Doherty". *Semifasciata* (Fig. 11). ♂, "Type/Kayeli, Buru, III. 97, Doherty". *Brevifasciata* (Sato, 1986: 75, fig. 9). ♂, "Type/Kanshirei, Formosa, 1000 ft, 3. vii. 1908, A. E. Wileman".

Distribution. Luzon, Palawan, Mindoro, Mindanao; India, Sri Lanka, Taiwan, Thailand, Malaysia, Sumatra, Sulawesi, Buru, New Guinea, Solomon Is.

Remarks. In my collection there are many specimens from Taiwan, Thailand, Sumatra and Sulawesi, but no specimens from Borneo. *E. dentilineata* recorded from Cebu and Mindanao by Semper (1901) may be a misidentified *bhurmitra* or the next new species.

Though *Boarmia susceptaria* Walker, 1866: 1584, described from Java was also treated as a junior synonym of *bhurmitra* by Hampson (1895), it is different from the latter in venation of forewing and female genitalia: veins  $R_{1+2}$  arising from  $R_3$ , and colliculum longer, parallel-sided; ductus bursae shorter; ductus seminalis arising from the anterior end of ductus bursae (Fig. 27). It is clear that *susceptaria* is not conspecific to *bhurmitra* but a good species.

*Ectropis susceptaria* (Walker) **sp. rev. & comb. nov.** (Fig. 9). Holotype. ♀, "Type/6-15, E.I.C.", BMNH.

### *Ectropis consentanea* sp. nov. (Figs. 4-6)

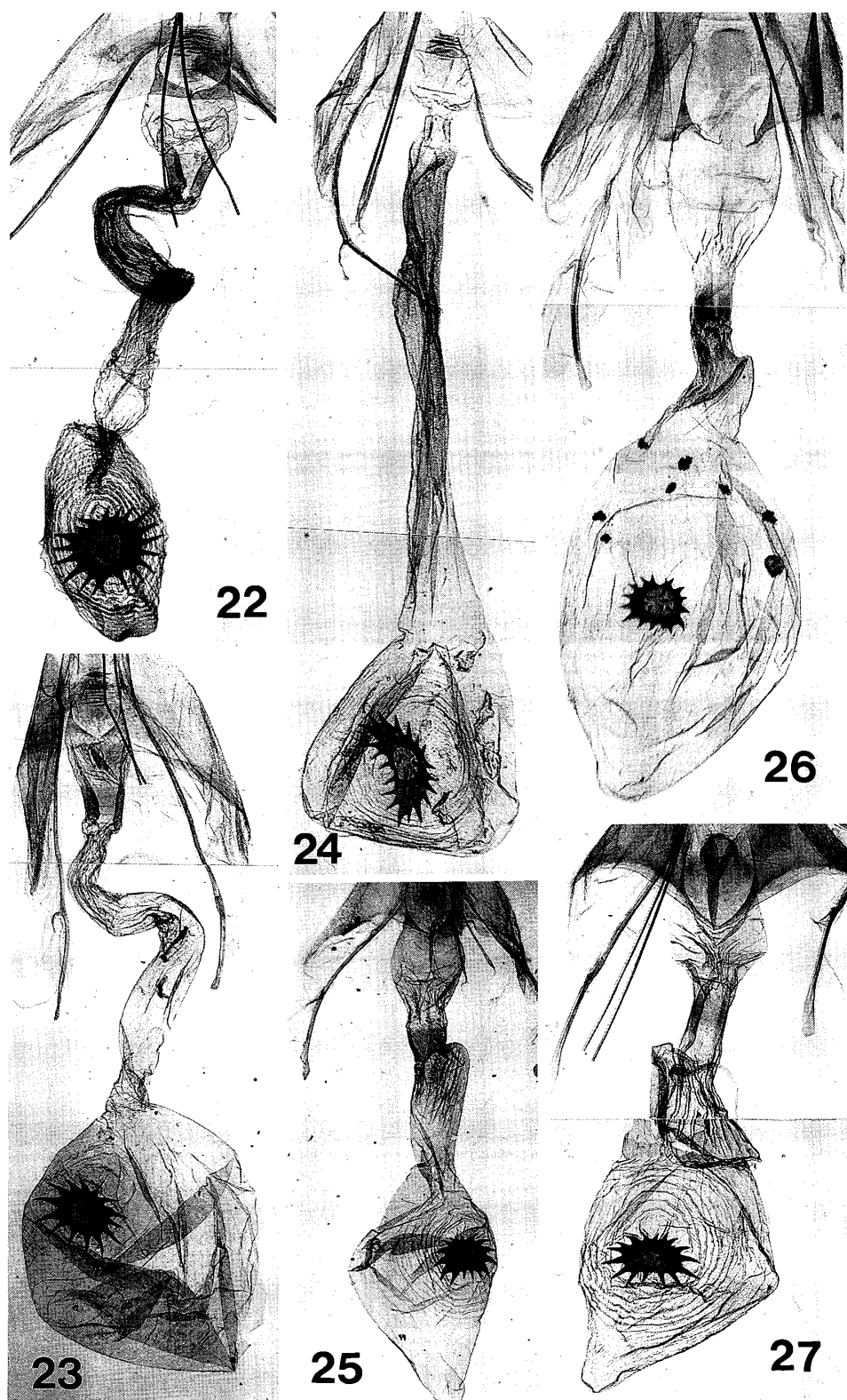
Length of forewing. ♂ 18-20 mm, ♀ 18-24 mm. Similar to *bhurmitra*, but easily distinguished by the absence of a cluster of spines on the third abdominal sternite and hair-pencil of hind tibia in male. Generally smaller in size. Both wings light greyish, without yellowish tint; postmedial and submarginal lines followed by whitish shade.

Male genitalia (Fig. 18). Valva slenderer than in *bhurmitra*. Vesica heavily scobinate apically with a short cornutus, while in *bhurmitra* very lightly scobinate without cornutus.

Female genitalia (Fig. 25). Different from those of *bhurmitra* as follows. Ostium bursae broader; ductus bursae much shorter; ductus seminalis arising from near colliculum.

Holotype. ♂. North Luzon, Ifgao Prov., Banaway, 9. v. 1986 (native collector), NSMT. Paratypes. 12 ♂ 2 ♀. Luzon. Type locality, 2 ♂, same data as holotype, 1 ♂, 20. i. 1986, 1 ♂, 22. i. 1986, 1 ♂, 10. iv. 1986, 3 ♂ 2 ♀, 11-12. v. 1986 (native collector). Palawan. 1 ♂, 5. ii. 1985, 1 ♂, 6. ii. 1985, 1 ♂, 10. v. 1985 (native collector). Mindanao. Davao, Upper Baracatan, Apo Range, Mt. Talomo, 1100 m, 1 ♂, 3-6. viii. 1985 (M. Owada). 1 ♂ 1 ♀ in NSMT, 2 ♂ in HI and others in my cabinet (RS).

Distribution. Luzon, Palawan, Mindanao.



Figs. 22-27. Female genitalia of *Ectropis* spp. 22. Holotype of *Boarmia bhurmitra* Walker. Ceylon. BMNH. 23. *Ditto*. Luzon. ZMC. 24. *E. pais* Prout. Sumatra. RS-3448. 25. *E. consentanea* sp. nov. Paratype. Luzon. RS-3456. 26. *E. schintlmeisteri* sp. nov. Luzon. ZMFK. 27. Holotype of *Boarmia susceptaria* Walker. Java. BMNH.

*Ectropis pais* Prout (Fig. 8)*Ectropis pais* Prout, 1931 : 166.*Ectropis ischnadelpha* Prout, 1932 : 97. **Syn. nov.**

*Pais* and *ischnadelpha* were described from the Malay Peninsula and Borneo, respectively. Prout (1932) separated *ischnadelpha* from *pais* by its larger size and non-bicoloured face. The dissection of the male holotype of *pais* revealed that the genitalia of *pais* are perfectly identical with those of *ischnadelpha*, though the latter is variable in size and colour of face. Accordingly *ischnadelpha* is newly regarded as a junior synonym of *pais*. Male and female genitalia are as shown in Fig. 21 and 24.

Specimens examined. Mindanao. Bukidnon, 45 km NW Maramag, Mt. Binansilang, 1200 m, Bergurwald, 2 ♂, 2. x. 1988 (Cerny & Schintlmeister), RS. The holotypes of *pais* and *ischnadelpha* in BMNH were also examined. *Pais* (Fig. 14). ♂, "Type/Malay Penin., Kedah Peak, 3300 ft., 14th March, 1928/Presented by F. M. S. Museum, B. M. 1935-543". *Ischnadelpha* (Fig. 15). ♂, "Type/B. N. Borneo, Mt. Kinabalu, Lumu Lumu, 5500ft., April 7th 1929/Presented by F. M. S. Museum, B. M. 1935-543" (genitalia not dissected).

Distribution. Mindanao ; Malay Peninsula, Borneo, Sumatra, Sulawesi.

Remarks. In my collection there are many specimens collected from Borneo and Sumatra.

***Ectropis schintlmeisteri*** sp. nov. (Fig. 7)

Length of forewing. ♂ 21-23 mm, ♀ 27 mm. In male, antenna fasciculate, both ends of each joint with a pair of projection bearing long sensory hair-tuft; third abdominal sternite without cluster of spines; hind tibia without hair-pencil; forewing with a fovea; veins  $R_1$  and  $R_2$  stalked, arising from  $R_3$  or the angle of the cell. Both wings densely irrorate with fuscous, tinged with orange along lines. Lines black, clearly marked at costa, broken elsewhere.

Male genitalia (Figs. 19 & 20). Vesica heavily scobinate apically with a single cornutus as in *consentanea*, but cornutus much larger.

Female genitalia (Fig. 26). Similar to those of *consentanea*, but easily distinguished from them by shorter ductus bursae and much longer colliculum.

Holotype. ♂. North Luzon, Mts. Prov., Chatol 1600 m, 15 km SE Bontoc, Nebelurwald, 24. ix-14. x. 1988 (Cerny & Schintlmeister), NSMT. Paratypes. 6 ♂, 1 ♀. Luzon. 1 ♂, same data as holotype, ZMFK. Mts. Prov., Mt. Amuyao, 22 km SE Bontoc, Nebelurwald, primär, 2450-2700 m, 1 ♂, 15-17. ii. 1988 (Cerny & Schintlmeister), ZMFK. Ifugao, Mt. Pulis, 16 km SSE Bontoc, Nebelurwald, primär 1900 m, 3 ♂ 1 ♀, 9-13. ii. 1988, 1 ♂, 28. ix. 1988 (Cerny & Schintlmeister). 3 ♂ 1 ♀ ZMFK, 1 ♂ RS.

Distribution. Luzon.

Remarks. In appearance this new species can be easily distinguished from similar congeners by orange tint along lines. It may be restricted to the high mountainous region of Is. Luzon so far. The specific name is dedicated to Dr. A. Schintlmeister, who took the type material.



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## 摘 要

2 新種の記載を含むフィリピンの *Ectropis* 属 (鱗翅目, シャクガ科) (佐藤力夫)

本報では, フィリピンから次の 4 種の *Ectropis* を記録した.

*E. bhurmitra* (Walker)

本種といくつかの近縁種のタイプ標本を比較検討することにより, シノニム関係を明らかにした. ルソン, パラワン, ミンドロ, ミンダナオから得られている. インド・マレー地域からニューギニアに至るまで広く分布しているが, ボルネオの標本は確認していない. 台湾から記載された *E. brevifasciata* Wileman は本種のシノニムである.



*E. consentanea* Sato (新種)

前種に似るが、やや小型。翅は灰色で黄色味を帯びない。♂の第3腹節腹面の刺毛列と後脚脛節の hair-pencil の欠如も良い区別点となる。ルソン、パラワン、ミンダナオから得られた。

*E. pais* Prout

両種のタイプ標本を検討し、*E. ischnadelpha* Prout を本種のシノニムとして整理した。ミンダナオから得られた。マレー半島からインドネシアにかけて分布している。

*E. schintlmeisteri* Sato (新種)

前後翅とも灰黒色で、横線に沿って黄色味を帯びる。ルソンの山地帯 (1600-2700 m) からのみ得られている。

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